

Patent
Serial No. 09/653,827
Attorney Docket No. 9G01.1-040

REMARKS

Summary of Telephone Interview of May 24, 2005

Applicant's associate agents thank Examiner To very much for the telephone interview held on May 24, 2005. During the interview, we discussed the present invention as recited in claim 1 and the cited references, especially Mullins (US Patent No. 5,857,197) and Balsley et al (US Patent No. 6,292,932). The Examiner has agreed with us that the present invention is different from these references. We discussed whether the UML model and MOF model described in Balsley et al may be considered as a lower abstraction level model and a higher abstraction level model. We argued that the UML model and MOF model are different models of different languages, rather than layers within a single model as recited in claim 1. The Examiner has suggested adding functional language to the claim in order to clarify the differences between the present invention and the references.

Claim Amendments

The present application contains six independent claims 1, 9, 35, 36, 43 and 44.

Applicant has amended claim 1 by clarifying that the model object in the higher layer is created "based on the information abstracted by the means for abstracting, whereby the model object in the higher layer provides representation of the business concept".

Similar amendments have been made to its corresponding claims 35, 43 and 44.

Applicant has also amended claim 9 by clarifying that the business model objects "in the business layers" are constructed based on the data access model objects in the data access layer "by adding business rules for representing

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business concepts", and that the package model objects "in the package layer" are constructed based on the business model objects "in the business layer" and "whereby the package model objects provide a representation of the business concepts".

Similar amendments have been made to its corresponding claim 36.

These amendments are made to add further clarification. The expressions added to the claims are supported by claims 1 and 9 as they stand at the time the current Action was issued. Applicant trusts that these amendments do not introduce into the claims any new matter or new issue that necessitates further examination.

Therefore, entry of these amendments are respectfully requested.

The present invention is directed to the transformation of model objects between layers in a metadata model (e.g., claims 1 and 9) or within a layer of the metadata model (e.g., claim 9)). As recited in amended claim 1, a model object in a layer with a lower degree of abstraction is transformed and a new model object is created in a higher layer with a higher degree of abstraction, whereby the model object in the higher layer provides a representation of the business concept. Thus, an object in a source database is represented as multiple model objects in the metadata model.

Remarks to "Response to Arguments"

The Examiner has alleged that Mullins (US Patent No. 5,857,197) suggests the two layers of abstractions in the description of column 4, lines 10-14, and that Fink (US Patent No. 6,490,590) suggests the concept of both transformation and refining the business rules according to the user application in the description of column 8, lines 19-29.

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Applicant trusts that the above claim amendments has further clarified the differences between the present invention and Mullins and Fink.

Mullins does not disclose any metadata model having multiple layers containing model objects of different degrees of abstraction. Mullins discloses a 3-tier architecture of hardware components for accessing data stored in a data store over a distributed network (column 3, line 63). The 3-tier architecture is not a metadata model, but rather it is a service architecture of different hardware components. Adapter abstraction layer 600 comprises the first adapter 400 and second adapter 500 (column 4, lines 55-61). Mullins does not disclose any metadata model transformer, or transformation of objects in a metadata model.

Fink does not disclose any transformation that transforms a model object from a lower layer to a higher layer. The section in Fink referred to by the Examiner discloses external modification carried out by a Subject Matter Expert (SME), i.e., a human. Fink does not disclose or suggest use of any transformation to refine business rules. Fink does not disclose how the external modification is carried out. Furthermore, according to the method disclosed by Fink, only after the logical data model (LDM) is created (310), a physical data model (PDM) is created (314) (column 6, lines 41-43). This is totally opposite to the transformations carried out by the metadata model transformer of the present invention, as recited in independent claims 9 and 36.

Rejection under 35 USC 103(a) to claims 1-8, 35 and 43-44

The Examiner has rejected claims 1-8, 35 and 43-44 under 35 U.S.C. 103(a), alleging that these claims are unpatentable over Mullins (US Patent No. 5,857,197) in view of Baisley et al (US Patent No. 6,292,932).

Applicant trusts that the above claim amendments has further clarified the differences between the present invention and Mullins and Baisley.

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As discussed above, Mullins does not disclose any metadata model having multiple layers containing model objects of different degrees of abstraction, or any transformation of model objects. Also, as the Examiner has indicated, Mullins does not teach means for abstracting the information by adding business rules for representing a business concept.

Baisley discloses a system and method for converting a model based on the Unified Modeling Language (UML) to a model based on the Meta Object Facility (MOF). The technique disclosed by Baisley is to translate a model in one language (UML) into another model in another language (MOF). There are two models of the same level of abstraction. In contrast, the present invention describes a technique in which objects in a single model are transformed, through adding business intelligence, to create additional objects in a higher layer in the same model, whereby the model objects in the higher layer provide representation of the business concept.

Baisley does not teach any means for abstracting the information by adding business intelligence, or for creating additional objects in the same model so that objects in a higher layer provides a representation of a business concept. The set of rules disclosed by Baisley in column 3, lines 25-29 is to generate a MOF model from any UML model. These rules are used to translate one model (UML) to another model (MOF) in a different language, rather than transforming model objects within a metadata model.

Therefore, even if a person skilled in the art attempts to combine Mullin with Baisley, he would use a 3-tier architecture of hardware components with a metadata model having no layers as per Mullin, and would attempt to translate the metadata model into a different model in a different language as per Baisley. He would still fail to create a model object in a higher layer in a metadata model so as to provide representation of a business concept. He would fail to obtain a metadata model transformer as recited in amended independent claims 1, 35

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and 43-44 of the present application. Claims 2-8 depend on claim 1, and thus the same arguments also apply to these claims.

Consequently, Applicant trusts that claims 1-8 and 43 and 44 have patentably distinguished over Mullins and Baisley.

Rejection under 35 USC 103(a) to claims 9-21, 24-33 and 36-42

The Examiner has rejected claims 9-21, 24-33 and 36-42 under 35 U.S.C. 103(a), alleging that these claims are unpatentable over Mullins (US Patent No. 5,857,197) in view of Fink (US Patent No. 6,490,590).

Applicant trusts that the above claim amendments has further clarified the differences between the present invention and Mullins and Fink.

As discussed above, Mullins does not disclose any metadata model having multiple layers. Fink does not disclose any transformation which can construct model objects of a higher degree of abstraction based on model objects of a lower degree of abstraction.

Therefore, even if one skilled in the art attempts to combine Mullins and Fink, he would use a 3-tier architecture of hardware components with a metadata model having no layers as per Mullin, and he would have a human attempt to modify the metadata model in order to create a logical data model (LDM) and then a physical data model (PDM) as per Fink. He would still fail to create model objects in a higher layer ("the business layer" and "the package layer" in claim 9) in a metadata model from a model object in a lower layer ("the data access layer" in claim 9) in the same metadata model so that model objects in the higher layer provide a representation of business concepts. He would fail to obtain a metadata model transformer as recited in the amended independent claims 9 and 36 of the present application. Claims 10-21 and 24-33 depend on claim 9,

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and claims 37-42 depend on claim 36, and thus the same arguments also apply to these claims.

Consequently, Applicant trusts that claims 9-21, 24-33 and 36-42 have patentably distinguished over Mullins and Fink.

Rejection under 35 USC 103(a) to claims 22 and 23 - dependent on claim 21

The Examiner has rejected claims 22 and 23, alleging these claims are unpatentable over Mullins (US Patent No. 5,857,197) in view of Fink (US Patent No. 6,490,590) and further in view of Henninger et al (US Patent No. 5,499,371).

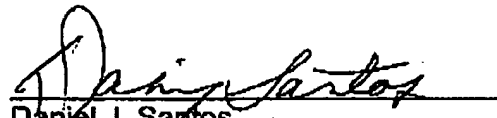
As these claims depend on claim 21, which has been patentably distinguished over Mullins and Fink as discussed above, Applicant trusts that dependent claims 22 and 23 are also patentable over the cited references.

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CONCLUSION

In conclusion, Applicant respectfully submits that the present invention as claimed in the claims is patentably distinguished over any combination of the cited references. The Applicant respectfully requests a Notice of Allowance be issued in this case. Should there be any further questions or concerns, the Examiner is urged to telephone the undersigned to expedite prosecution.

Respectfully submitted,
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